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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,790	03/30/2005	Takashi Sano	05223/LH	1527

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EXAMINER	
HU, RUI MENG	
ART UNIT	**PAPER NUMBER**
2618	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	10/529,790	SANO, TAKASHI
	Examiner	Art Unit
	RuiMeng Hu	2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/30/2005*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

1. The present Office Action is based upon the original patent application filed on 03/30/2005 as modified by the preliminary amendment filed on 03/30/2005. **Claims 1-22** are now pending in the present application.

Information Disclosure Statement

2. The information disclosure statement submitted on 03/30/2005 been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. **Claims 1-7, 9-10 and 20-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gaskill et al. (US Patent 5136719)** in view of **Kianush et al. (US Pub. 2001/0036811 A1).**

· Consider **claim 1**, Gaskill et al. clearly disclose a radio wave receiver for receiving radio waves having a predetermined frequency (Abstract), the receiver comprising: an antenna (figure 1, antenna 12); an variable capacitor (figure 1, element 14) connected to the antenna; a memory (figure 3, memory 54); and a controller (figure 1, controller 16) which determines an optimum bias voltage of the varactor with which the radio wave receiver is in a predetermined reception state and writes optimum bias voltage data into the memory and, controls the variable capacitor based on the optimum bias voltage data (column 4 lines 35-55, column 5 lines 37-46, column 6 lines 11-14).

However Gaskill et al. fail to disclose which determines and stores an optimum capacitance of the variable capacitor and controls the variable capacitor based on the optimum capacitance data.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28) thus the use of varactors and DC/DC converters can be avoided, as make it possible to use a lower voltage.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al.

paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 2 as applied to claim 1**, Gaskill et al. as modified by Kianush et al. fail to disclose wherein the variable capacitor comprises: capacitors; and switching elements connected to the capacitors in series, and the controller turns on/off the switching elements based on the optimum capacitance data.

In the same field of endeavor, Kianush et al. clearly disclose wherein the variable capacitor comprises: capacitors; and switching elements connected to the capacitors in series, and the controller turns on/off the switching elements based on the optimum capacitance data (figure 3, paragraph 27).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. as to carry out the performance of the switched capacitors tuning circuit.

Consider **claim 3 as applied to claim 1**, Gaskill et al. as modified by Kianush et al. fail to disclose wherein the capacitors comprise internal capacitors provided in a capacitor module and external capacitors provided outside the capacitor module.

In the same field of endeavor, Kianush et al. clearly disclose wherein the capacitors comprise internal capacitors (figure 3, C1-Cn) provided in a capacitor module and external capacitors provided outside the capacitor module (figure 3, C0).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. as to carry out the performance of the switched capacitors tuning circuit.

Consider **claim 4 as applied to claim 1**, Gaskill et al. as modified by Kianush et al. clearly disclose further comprising a reception state detector (figure 1, element 18, column 4 lines 56-59) which detects a reception state, and wherein the controller (figure 1, controller 16) controls the variable capacitor (figure 1, element 14) in such a manner that a capacitance component connected to the antenna gradually varies (column 4 lines 48-55) when receiving the radio waves having the predetermined frequency and writes optimum bias voltage data into the memory when the reception state detector detects the predetermined reception state (figure 3, after comparator 50, the optimum capacitance data of the max RSSI inputted to memory 54).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit

sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 5 as applied to claim 4**, Gaskill et al. as modified by Kianush et al. clearly disclose wherein the controller varies a capacitance of the variable capacitor in a direction along which a capacitance component to be connected to the antenna is increased (Abstract, this sweeping (within a frequency band) is desirably performed in discrete voltage steps that correspond to unit increments of varactor capacitance), and writes optimum bias voltage data into the memory, the optimum bias voltage data for setting the capacitance of the variable capacitor to a capacitance immediately before a change of a reception level shifts from an increase to a decrease (column 5 lines 26-36).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit

frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 6 as applied to claim 1**, Gaskill et al. as modified by Kianush et al. clearly disclose wherein the memory stores at least two sets of optimum bias voltage data for receiving radio waves having at least two frequencies, the at least two sets of data are selectively read (column 4 lines 42-55).

However Gaskill et al. as modified by Kianush et al. fail to disclose the memory stores optimum capacitance data.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 7 as applied to claim 6**, Gaskill et al. as modified by Kianush et al. clearly disclose wherein the controller writes into the memory at least two sets of optimum bias voltage data for receiving the radio waves having the at least two frequencies (column 4 lines 42-55).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 9 as applied to claim 1**, Gaskill et al. as modified by Kianush et al. clearly disclose having a receiving mode (a tuned receiver for receiving messages) and a tuning mode, wherein the controller writes into the memory optimum bias voltage data in the tuning mode (column 4 lines 42-55), and sets a capacitance of the variable capacitor to the optimum capacitance (the stored optimum bias voltage sets the optimum capacitance of the capacitor for receiving the corresponding channel).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 10 as applied to claim 1**, Gaskill et al. as modified by Kianush et al. clearly disclose wherein the variable capacitor comprises: a variable capacitance diode (figure 1, element 14, Abstract); and a voltage application circuit which applies a voltage according to the optimum capacitance data supplied from the controller to the variable capacitance diode (figure 1, element 16 supplying the stored optimum bias voltage to the varactor diode and sets the optimum capacitance).

Consider **claim 20**, Gaskill et al. clearly disclose a method for setting a tuning capacitance for a radio wave receiver for receiving radio waves having a predetermined frequency (Abstract), the method comprising: determining an optimum bias voltage of a varactor diode connected to an antenna (figure 1) with which the radio wave receiver is in a predetermined reception state; writing optimum bias voltage data into a memory; and controlling the varactor diode based on the optimum bias voltage data (column 4 lines 35-55, column 5 lines 37-46, column 6 lines 11-19).

However Gaskill et al. fail to disclose which determines and stores an optimum capacitance of the variable capacitor and controls the variable capacitor based on the optimum capacitance data.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28) thus the use of varactors and DC/DC converters can be avoided, as make it possible to use a lower voltage.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 21 as applied to claim 20**, Gaskill et al. as modified by Kianush et al. clearly disclose wherein the determining comprises: gradually varying a capacitance of the variable capacitor (column 4 lines 48-55, Abstract, varying the bias voltage of the varactor diode would vary the varactor capacitance) when receiving the radio waves having the predetermined frequency; detecting a reception state of the radio wave receiver (figure 1, element 18, column 4 lines 56-59); and determining optimum capacitance data when the predetermined reception state is detected (column

5 lines 37-46, the 8-bit word represents the optimum bias voltage of the varactor diode also determines the optimum varactor capacitance).

Consider **claim 22 as applied to claim 21**, Gaskill et al. as modified by Kianush et al. clearly disclose wherein the gradually varying comprises varying a capacitance of the variable capacitor in a direction along which a capacitance component to be connected to the antenna is increased (Abstract, this sweeping (within a frequency band) is desirably performed in discrete voltage steps that correspond to unit increments of varactor capacitance); and the determining comprises determining as the optimum capacitance data (the determined optimum bias voltage sets the optimum varactor capacitance) for setting the capacitance of the variable capacitor to a capacitance immediately before a change of a reception level shifts from an increase to a decrease (column 5 lines 26-36).

Claims 8 and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gaskill et al. (US Patent 5136719)** in view of **Kianush et al. (US Pub. 2001/0036811 A1)** and **Sakami et al. (US Patent 4315332).**

Consider **claim 8 as applied to claim 1**, Gaskill et al. as modified by Kianush et al. fail to disclose wherein the radio waves having the predetermined frequency comprise a standard time signal including a time code.

In the same field of endeavor, Sakami et al. clearly disclose wherein the radio waves having the predetermined frequency comprise a standard time signal including a time code (Abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Sakami et al. into the art of Gaskill et al. as modified by Kianush et al. as to include a timepiece circuit and receiving the predetermined frequency with standard time signal including a time code to obtain time information for updating the current time of the receiver.

Consider **claim 11**, Gaskill et al. clearly disclose a radio wave receiver for receiving radio waves having a predetermined frequency (Abstract), the receiver comprising: an antenna (figure 1, antenna 12); an variable capacitor (figure 1, element 14) connected to the antenna; a memory (figure 3, memory 54); and a controller (figure 1, controller 16) which determines an optimum bias voltage of the varactor with which the radio wave receiver is in a predetermined reception state and writes optimum bias voltage data into the memory and, controls the variable capacitor based on the optimum bias voltage data (column 4 lines 35-55, column 5 lines 37-46, column 6 lines 11-14).

However Gaskill et al. fail to disclose which determines and stores an optimum capacitance of the variable capacitor and controls the variable capacitor based on the optimum capacitance data.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28) thus the use of varactors and DC/DC converters can be avoided, as make it possible to use a lower voltage.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Gaskill fail to disclose a radio-controlled timepiece comprising: a time code generator which generates a time code based on the radio waves received by the radio wave receiver; a clocking unit which counts a current time; and a correction unit which corrects current time counted by the clocking unit based on the time code generated by the time code generator.

In the same field of endeavor, Sakami et al. clearly disclose a radio-controlled timepiece (figure 1, Abstract) comprising: a time code generator (figure 2, time signal detector 21) which generates a time code based on the radio waves received by the radio wave receiver; a clocking unit (figure 2, counters 29 and 30) which counts a current time; and a correction unit (figure 2, time correction circuit 31) which corrects current time counted by the clocking unit based on the time code generated by the time code generator.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Sakami et al. into the art of Gaskill et al. as to include a timepiece circuit and receiving

the predetermined frequency with standard time signal including a time code to obtain time information for updating the current time of the receiver.

Consider **claim 12 as applied to claim 11**, Gaskill et al. as modified by Kianush et al. and Sakami et al. fail to disclose wherein the variable capacitor comprises: capacitors; and switching elements connected to the capacitors in series, and the controller turns on/off the switching elements based on the optimum capacitance data.

In the same field of endeavor, Kianush et al. clearly disclose wherein the variable capacitor comprises: capacitors; and switching elements connected to the capacitors in series, and the controller turns on/off the switching elements based on the optimum capacitance data (figure 3, paragraph 27).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. and Sakami et al. as to carry out the performance of the switched capacitors tuning circuit.

Consider **claim 13 as applied to claim 12**, Gaskill et al. as modified by Kianush et al. and Sakami et al. fail to disclose wherein the capacitors comprise internal capacitors provided in a capacitor module and external capacitors provided outside the capacitor module.

In the same field of endeavor, Kianush et al. clearly disclose wherein the capacitors comprise internal capacitors (figure 3, C1-Cn) provided in a capacitor module and external capacitors provided outside the capacitor module (figure 3, C0).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. and Sakami et al. as to carry out the performance of the switched capacitors tuning circuit.

Consider **claim 14 as applied to claim 11**, Gaskill et al. as modified by Kianush et al. and Sakami et al. clearly disclose further comprising a reception state detector (figure 1, element 18, column 4 lines 56-59) which detects a reception state, and wherein the controller (figure 1, controller 16) controls the variable capacitor (figure 1, element 14) in such a manner that a capacitance component connected to the antenna gradually varies (column 4 lines 48-55) when receiving the radio waves having the predetermined frequency and writes optimum bias voltage data into the memory when the reception state detector detects the predetermined reception state (figure 3, after comparator 50, the optimum capacitance data of the max RSSI inputted to memory 54).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. and Sakami et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning

circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 15 as applied to claim 14**, Gaskill et al. as modified by Kianush et al. and Sakami et al. clearly disclose wherein the controller varies a capacitance of the variable capacitor in a direction along which a capacitance component to be connected to the antenna is increased (Abstract, this sweeping (within a frequency band) is desirably performed in discrete voltage steps that correspond to unit increments of varactor capacitance), and writes optimum bias voltage data into the memory, the optimum bias voltage data for setting the capacitance of the variable capacitor to a capacitance immediately before a change of a reception level shifts from an increase to a decrease (column 5 lines 26-36).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. and Sakami et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit

frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 16 as applied to claim 11**, Gaskill et al. as modified by Kianush et al. and Sakami et al. clearly disclose wherein the memory stores at least two sets of optimum bias voltage data for receiving radio waves having at least two frequencies, the at least two sets of data are selectively read (column 4 lines 42-55).

However Gaskill et al. as modified by Kianush et al. fail to disclose the memory stores optimum capacitance data.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. and Sakami et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 17 as applied to claim 16**, Gaskill et al. as modified by Kianush et al. and Sakami et al. clearly disclose wherein the controller writes into the memory at least two sets of optimum bias voltage data for receiving the radio waves having the at least two frequencies (column 4 lines 42-55).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. and Sakami et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 18 as applied to claim 11**, Gaskill et al. as modified by Kianush et al. and Sakami et al. clearly disclose having a receiving mode (a tuned receiver for receiving messages) and a tuning mode, and the controller writes into the memory optimum bias voltage data in the tuning mode (column 4 lines 42-55), and sets a capacitance of the variable capacitor to the optimum capacitance in the receiving mode (the stored optimum bias voltage sets the optimum capacitance of the capacitor for receiving the corresponding channel).

However Gaskill et al. as modified by Kianush et al. fail to disclose writes optimum capacitance data into the memory.

In the same field of endeavor, Kianush et al. clearly disclose using switched capacitors tuning circuit for tuning frequency (figure 3, paragraphs 12, 25-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Kianush et al. into the art of Gaskill et al. as modified by Kianush et al. and Sakami et al. as to utilize the advantageous switched capacitors tuning circuit as an alternate way for tuning frequency, thus (Kianush et al. paragraph 29) the switched capacitors tuning circuit sweeps through the frequency band in a frequency tuning step of 5 kHz, a 8-bit frequency word (capacitance data) representing a good channel signal can be determined and stored.

Consider **claim 19 as applied to claim 11**, Gaskill et al. as modified by Kianush et al. and Sakami et al. clearly disclose wherein the variable capacitor comprises: a variable capacitance diode (figure 1, element 14, Abstract); and a voltage application circuit which applies a voltage according to the optimum capacitance data supplied from the controller to the variable capacitance diode (figure 1, element 16 supplying the stored optimum bias voltage to the varactor diode and sets the optimum capacitance).

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RuiMeng Hu
R.H./rh
February 23, 2007

2-27-07
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Primary Examiner
Technology Center 2600